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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,921	06/06/2001	Daniel R. Gaur	042390.P11387	1116

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EXAMINER	
BOUTAH, ALINA A	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/876,921	GAUR, DANIEL R.	
	Examiner	Art Unit	
	Alina N Boutah	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 9-18, and 21-28* is/are rejected.

7)☒ Claim(s) *7, 8, 19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This action is in response to Applicant's amendment filed January 18, 2005. Claims 1-28 are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-8, 18-20 and 27 are rejected under 35 U.S.C. 1 12, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 6-8, 18-20 and 27, the phrase "about" renders the claim indefinite because it is unclear where the limitation lies.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 9-17 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,613,129 issued to Walsh in view of USPN 6,735,629 issued to Cafarelli, III et al. (hereinafter referred to as Cafarelli).

Regarding claim 1, Walsh teaches a method of improving the receive performance of a network adapter, the method comprising:

monitoring an incoming traffic load (abstract; col. 2, lines 62 - col. 3, line 5); and

dynamically tuning an interrupt delay in response to the incoming traffic load, wherein dynamically tuning the interrupt delay includes increasing the interrupt delay in response to an increase in the incoming network traffic load, and decreasing the interrupt delay in response to a decrease in the incoming network traffic load (abstract; col. 2, lines 10-27; col. 3, lines 21-30, lines 49-64).

However, Walsh fails to explicitly teach the traffic load being a network traffic load. Cafarelli teaches monitoring an incoming network traffic load (abstract). At the time the invention was made, one or ordinary skill in the art would have been motivated to monitor an incoming traffic load and turning an interrupt delay according to the load in order to dynamically optimizing the CPU cycles for analyzing data retrieved from the network in a manner for eliminating system freeze under high network load (col. 1, lines 24-26), thus maximizing the network's efficiency.

Regarding claim 2, Walsh teaches the method of claim 1, wherein dynamically tuning the interrupt delay includes comparing the incoming traffic load with an upper threshold, and wherein the incoming traffic load is greater than the upper threshold, increasing the interrupt delay (col. 4, lines 41-43).

Regarding claim 3, Walsh teaches the method of claim 1, wherein dynamically tuning the interrupt delay includes comparing the incoming network traffic load with a lower threshold, and wherein the incoming network traffic load is less than the lower threshold, decreasing the interrupt delay (col. 4, lines 47-49).

Regarding claim 4, Walsh does not explicitly teach the method of claim 1, wherein monitoring the incoming network traffic load includes calculating a number of packets received per interrupt. Cafarelli teaches monitoring the incoming network traffic load including calculating a number of packets received per interrupt (abstract). At the time the invention was made, one of ordinary skill in the art would have been motivated to monitor the incoming network traffic load including calculating a number of packets received per interrupt in order to determine the threshold, therefore facilitating the tuning of the interrupt delay.

Regarding claim 5, Walsh does not explicitly teach the method of claim 1, wherein monitoring the incoming network traffic load includes using a statistical counter to periodically

examine a network controller. Cafarelli teaches monitoring the incoming network traffic load including using a statistical counter to periodically examine a network controller (abstract). At the time the invention was made, one of ordinary skill in the art would have been motivated to monitor the incoming network traffic load including using a statistical counter to periodically examine a network controller in order to determine the threshold, therefore facilitating the tuning of the interrupt delay.

Regarding claim 9, this is similar to claim 1 therefore is rejected under the same rationale.

Regarding claim 10, Walsh teaches the method of claim 9, wherein, when the interrupt delay is increased, the upper threshold is increased and the lower threshold is increased, and when the interrupt delay is decreased, the upper threshold is decreased and the lower threshold is decreased (abstract; col. 2, lines 10-27; col. 3, lines 21-30, lines 49-64; col. 4, lines 41-43 and 47-49).

Regarding claim 11, Walsh teaches the method of claim 10, wherein the upper threshold and the lower threshold are increased or decreased by an equal amount (col. lines 41-43 and 47-49).

Regarding claim 12, Walsh teaches the method of claim 10, wherein the upper threshold and the lower threshold are increased or decreased by different amounts (col. lines 41-43 and 47-49).

Claims 13-20 are similar to claims 1-8, respectively therefore are rejected under the same rationale.

Claims 21-24 are similar to claims 1-4, respectively, therefore are rejected under the same rationale.

Regarding claim 25, Walsh teaches a method of dynamically tuning a network adapter interrupt delay, the method comprising:

generating a monitoring input, the monitoring input comprising a value corresponding to an incoming traffic load (abstract);

comparing the monitoring input with an upper threshold, and wherein the monitoring input is greater than the upper threshold, increasing the interrupt delay, and wherein the monitoring input is less than or equal to the upper threshold (abstract; col. 2, lines 10-27; col. 3, lines 21-30, lines 49-64; col. 4, lines 41-43 and 47-49);

comparing the monitoring input with a lower threshold, and wherein the monitoring input is less than the lower threshold, decreasing the interrupt delay (abstract; col. 2, lines 10-27; col. 3, lines 21-30, lines 49-64; col. 4, lines 41-43 and 47-49).

However, Walsh does not explicitly teach the traffic load being a network load on a network adaptor. Cafarelli teaches monitoring an incoming network traffic load on a network adaptor (abstract). At the time the invention was made, one or ordinary skill in the art would have been motivated to monitor an incoming traffic load and turning a network adaptor interrupt delay according to the load in order to dynamically optimizing the CPU cycles for analyzing data retrieved from the network in a manner for eliminating system freeze under high network load (col. 1, lines 24-26), thus maximizing the network's efficiency.

Regarding claim 26, Walsh teaches the method of claim 25, wherein, when the network adapter interrupt delay is increased, the upper threshold is increased and the lower threshold is increased, and when the network adapter interrupt delay is decreased, the upper threshold is decreased and the lower threshold is decreased (abstract; col. 2, lines 10-27; col. 3, lines 21-30, lines 49-64; col. 4, lines 41-43 and 47-49).

Claim 28 is similar to claim 4, therefore is rejected under the same rationale.

Claims 6, 18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,613,129 issued to Walsh in view of USPN 6,735,629 issued to Cafarelli, III et al. (hereinafter referred to as Cafarelli), in further view of USPN 6,434,651 issued to Gentry, Jr.

Regarding claims 6, 18, and 27, both Walsh and Cafarelli do not explicitly teach the method of claim 1, wherein the interrupt delay may be dynamically tuned within the range of from about 0 milliseconds to about 128 milliseconds. Gentry teaches tuning an interrupt delay within the range of 0-128 milliseconds (col. 8, line 43 to col. 9, line 6). At the time the invention was made, one of ordinary skill in the art would have been motivated to tune the interrupt delay within the range of 0-128 milliseconds in order to provide the interrupt delay that is suitable for the network load, therefore maximizing the network system's efficiency.

Allowable Subject Matter

Claims 7, 8, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7, S, 19 and 20 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 1 12, 2nd paragraph set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claims 7 and 19, the cited prior art of record does not teach the method of claim 1, wherein increasing the interrupt delay corresponds to an increase of from about 3 milliseconds to about 5 milliseconds.

Regarding claims 8 and 20, the cited prior art of record does not teach the method of claim 1, wherein decreasing the interrupt delay corresponds to a decrease of from about 1 millisecond to about 3 milliseconds.

Response to Arguments

Applicant's arguments filed January 18, 2005 have been fully considered but they are not persuasive.

Applicant's argument in regards to the 112 rejection has been consider but not persuasive. Although MPEP Sect. 2173.05(b)(A) indicates that the term "about" is allowed, in this case, it is still ambiguous because it is unclear as to where the boundary lies. Therefore, the rejection of claims 6-8 and 18-20 are sustained.

In response to Applicant's argument that Walsh does not disclose "monitoring an incoming network traffic load" and "dynamically tuning an interrupt delay in response to the incoming network traffic load," the PTO respectfully submits that this is indeed taught by Walsh. Col. 2, line 62 to col. 3, line 32 of Walsh states that "when data arrives over the networks, the I/O adapters forward the data to the processor subsystem...interrupts are delayed to allow the CPU to perform the processing needed for lower priority interrupts already received and also to perform lower interrupt-priority system processes...the system experience is used to dynamically adjust parameters for interrupt delay to handle interrupts efficiently and to thereby operate

properly" (col. 3, lines 27-30). The arrival and processing of data is interpreted as "monitoring an incoming traffic load" and the dynamically adjust parameters for interrupt delay is interpreted as "dynamically tuning an interrupt delay in response to the incoming network traffic load." Therefore Walsh-Cafarelli combination does teach the claimed limitation.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alina N. Boutah whose telephone number is 571-272-3908. The examiner can normally be reached on Monday-Friday (9:00 am - 5:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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